

CLAIMS

What is claimed is:

1. A mirror assembly for an optical cross-connect switch, comprising:

5 (a) a moveable mirror having substantially non-silicon reflective surfaces; and

(b) means for electromechanically moving said mirror to steer an optical beam in two-dimensional space.

Sub A1

10 2. A mirror assembly as recited in claim 1, wherein said mirror is a non-MEMS mirror.

15 3. A mirror assembly as recited in claim 1, wherein said mirror is coupled to a support member and is moveable in two dimensions in relation to said support member.

Sub A2

4. A mirror assembly as recited in claim 3, wherein said mirror is coupled to said support member by a flexible wire.

20 5. An optical cross-connect switch as recited in claim 4, wherein said wire has a serpentine shape.

25 6. A mirror assembly as recited in claim 1, wherein said mirror is coupled to a first support member, wherein said first support member is coupled to a second support member, wherein said mirror is moveable in relation to said first

support member around a first axis, and wherein said first support member is moveable in relation to said second support member around a second axis substantially perpendicular to said first axis.

5 7. A mirror assembly as recited in claim 6, wherein said mirror is suspended in relation to said first support member by a flexible wire and wherein said first support member is suspended in relation to said second support member by a flexible wire.

10 8. A mirror assembly as recited in claim 7, wherein each said wire has a serpentine shape.

15 9. A mirror assembly as recited in claim 6, wherein said means for moving said mirror comprises at least one coil associated with said first support member and at least one magnet associated with said second support member, and wherein energizing said coil applies rotational torque to said first support member in relation to said second support member.

20 10. A mirror assembly as recited in claim 1, wherein said means for moving said mirror comprises:

- (a) at least one coil coupled to said mirror; and
- (b) a magnet associated with said coil and positioned to form a magnetic field for said coil.

25

11. A mirror assembly as recited in claim 10, wherein a force is exerted on said mirror causing said mirror to move when said coil is energized.

12. A mirror assembly as recited in claim 1, wherein said means for moving said mirror comprises:

(a) a plurality of coils of curved or straight shapes coupled to said mirror and positioned around the circumference of a circle coaxial with said mirror; and

(b) a plurality of magnets positioned to form a circular magnetic field for said coils.

13. A mirror assembly as recited in claim 1, wherein said means for moving said mirror comprises:

(a) a plurality of coils of curved or straight shapes coupled to said mirror and positioned around the circumference of a circle coaxial with the mirror; and

(b) a plurality of driving magnets having magnetic pole surfaces forming part of a hemisphere around the coils.

14. A mirror assembly for an optical cross-connect switch, comprising:

(a) a moveable non-MEMS mirror having substantially non-silicon reflective surfaces; and

(b) at least one coil coupled to each said mirror; and

(c) at least one magnet associated with each coil and positioned for form a magnetic field for said coil.

15. A mirror assembly as recited in claim 14, wherein said mirror is

coupled to a support member and is moveable in two dimensions in relation to said support member.

16. A mirror assembly as recited in claim 15, wherein said mirror is
5 coupled to said support member by a flexible wire.

17. An optical cross-connect switch as recited in claim 17, wherein said wire has a serpentine shape.

Sub
A2
pr
18. A mirror assembly as recited in claim 14, wherein said mirror is
coupled to a first support member, wherein said first support member is coupled to
a second support member, wherein said mirror is moveable in relation to said first
support member around a first axis, and wherein said first support member is
moveable in relation to said second support member around a second axis
15 substantially perpendicular to said first axis.

19. A mirror assembly as recited in claim 18, wherein said mirror is
suspended in relation to said first support member by a flexible wire and wherein
said first support member is suspended in relation to said second support member
20 by a flexible wire.

20. A mirror assembly as recited in claim 19, wherein each said wire has
a serpentine shape.

25